

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Reissue Application of:

U.S. Patent No. **5,938,865**

Issue Date: **August 17, 1999**

To: **KONDO, et al**

For. **PROCESS FOR PRODUCING HIGH-STRENGTH SEAMLESS PIPE HAVING EXCELLENT SULFIDE STRESS CRACKING RESISTANCE**

PRELIMINARY AMENDMENT

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Date: August 15, 2003

Prior to calculation of the filing fee and examination of this Reissue application, please amend the above-identified patent application as follows:

IN THE CLAIMS:

Please **AMEND** the claims as follows:

1. (Amended) A process comprising steps of hot piercing and hot rolling for producing a high strength seamless steel pipe, having excellent sulfide stress cracking resistance, characterized by using a billet of low alloy steel which contains, in weight %, 0.15-0.50 % of C, 0.1-1-1.5 % of Cr, 0.1-1.5 % of Mo, 0.005-0.50 % of Al, 0.005-0.50 % of Ti and 0.003-0.50 % of Nb, and comprising the followings steps:

(1) hot piercing the billet into a hollow shell,

(2) hot rolling the hollow shell with 40% or more of cross sectional reduction ratio,

(2) the hollow shell

- (3) finishing the hot rolling temperature range of 800-1100°C,
- (4) putting the manufactured steel pipe promptly in a complementary heating apparatus after the finish rolling, and complementary heating at the temperature and time satisfying the following formula (a),
- (5) quenching the steel pipe immediately after taking out of the complementary heating apparatus, and
- (6) tempering the pipe at a temperature not higher than the Ac_1 transformation point as the last heat treatment,

$$23500 \leq (T + 273) \times (21 + \log t) \leq 2600 \text{ ---- (a)}$$

where, T (°C) is a temperature of not lower than 850°C, and t is a time (hr).

2. (Amended) A process for producing a high strength seamless steel pipe, having excellent sulfide stress cracking resistance according to claim 1, characterized by further comprising one or more times intermediate heat treating which consists of quenching or combination of quenching and tempering, between the above-mentioned quenching step (5) and the last heat treatment step 6.